



News for Immediate Release

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WORKSHOP SET ON REMOTE SENSING APPLICATIONS FOR WATER RESOURCES MANAGEMENT AND DROUGHT

SACRAMENTO – Quantifying drought impacts and managing California’s water resources during drought conditions using satellite remote sensing will be among the topics of a February 25-26 workshop sponsored by the Department of Water Resources (DWR) and the National Aeronautics and Space Administration (NASA).

The Sacramento Convention Center workshop will begin at 1 p.m. on Feb. 25 and last until noon on Feb. 26. Further details are shown on the attached agenda. The workshop is free to attend and is open to the public.

The workshop will highlight the partnership between NASA and DWR in the development and application of remote sensing research for water management purposes, with a special focus on drought preparedness and response.

Workshop topics will include a water outlook and update from the National Integrated Drought Information System; estimating acreage of fallowed agricultural land; monitoring Central Valley land subsidence; regional groundwater monitoring with orbiting satellite; monitoring and forecasting atmospheric river events; assessing snowpack conditions, and improving subseasonal forecasting of precipitation. Each uses remote sensing data and research to support drought preparedness and response.

Remote sensing offers unique opportunities for filling in data gaps over large geographic areas (such as mountain snowpack) that cannot be cost-effectively covered by ground-based measurements. It also may assist in long-term climate change adaptation.

DWR and NASA began examining opportunities for water resources applications of remote sensing data and research through a partnership established with funding from the American Recovery and Reinvestment Act of 2009. Ongoing collaborations have been evolving on a variety of projects ranging from levee monitoring to basic research on groundwater.

DWR projects such as an observing system for extreme precipitation installed as part of the enhanced flood response and emergency preparedness program are developing new data sources that will help support future activities.

With California facing one of the most severe droughts on record, Governor Brown declared a [drought State of Emergency](#) last month and directed state officials to take all necessary actions to prepare for water shortages, and the Governor, joined by legislative leaders, [announced legislation](#) to immediately help communities deal with the devastating dry conditions affecting our state and to provide funding to increase local water supplies.

Governor Brown met with [President Obama](#) about crucial federal support during the ongoing drought last week, and the state [continues](#) to work with [federal partners](#) to ensure a [coordinated](#) drought response. Governor Brown and the administration have also [expressed support](#) for [federal legislation](#) introduced by Senators Feinstein and Boxer and Representatives Jim Costa, Tony Cárdenas and Sam Farr.

Across state government, action is being taken. The Department of General Services is leading water [conservation efforts](#) at state facilities, and the Department of Transportation is cutting water usage along California's roadways by 50 percent. Caltrans has also launched a public awareness campaign, putting a water [conservation message](#) on their more than 700 electronic highway signs.

In January, the state took [action to conserve](#) water in numerous Northern California [reservoirs](#) to meet minimum needs for operations impacting the environment and the economy, and recently the Department of Water Resources and U.S. Bureau of Reclamation announced they would seek the authority to make [water exchanges](#) to deliver water to those who need it most. The State Water Resources Control Board announced it would work with hydropower generators and the Federal Energy Regulatory Commission to [preserve water](#) in California reservoirs. Recently the California Department of Fish and Wildlife and the California Fish and Game Commission [restricted fishing](#) on [some waterways](#) due to low water flows worsened by the drought.

The state is working to protect local communities from the dangers of extreme drought. The California Department of Public Health [identified](#) and offered [assistance](#) to communities at risk of severe drinking water shortages and is working with other state and local agencies to develop solutions for vulnerable communities. CAL FIRE hired [additional firefighters](#) and is continuously [adjusting staffing](#) throughout the state to help address the [increased fire threat](#) due to drought conditions. The California Department of Food and Agriculture launched a [drought website](#) to help farmers, ranchers and farmworkers find resources and assistance programs that may be available to them during the drought.

Even as the state deals with the immediate impacts of the drought, it's also planning for the future. Recently, the California Natural Resources Agency, the California Environmental Protection Agency and CDFA released the [California Water Action Plan](#), which will guide state efforts to enhance water supply reliability, restore damaged and destroyed ecosystems and improve the resilience of our infrastructure.

Governor Brown has called on all Californians to voluntarily reduce their water usage by 20 percent, and the [Save Our Water](#) campaign launched four [public service announcements](#) encouraging residents to conserve and has resources available in [Spanish](#). Last December, the Governor formed a [Drought Task Force](#) to review expected water allocations and California's preparedness for water scarcity. In May 2013, Governor Brown issued an [Executive Order](#) to direct state water officials to expedite the review and processing of voluntary transfers of water.

**NASA and the California Department of Water Resources
Remote Sensing for Drought Monitoring and Response Workshop**

February 25th and 26th, 2014
Sacramento Convention Center, Room103
1400 J Street, Sacramento, CA 95814

Tuesday, February 25

9:30 – 11:00 Press Conference

DWR-NASA Partnership, Jeanine Jones, CDWR & Lawrence Friedl, NASA Headquarters

Airborne Snow Observatory, Tom Painter, NASA Jet Propulsion Laboratory
Fallowed Area Mapping, Forrest Melton, NASA Ames Research Center-
Cooperative for Research in Earth Science and Technology (ARC-CREST)
Subsidence Mapping, Tom Farr, NASA JPL

Atmospheric Rivers & Seasonal Forecasting, Duane Waliser, NASA JPL
Upcoming NASA Satellite Missions, Brad Doorn, NASA HQ

1:00 – 1:15 Welcome and Introduction

Jeanine Jones, California Department of Water Resources
Lawrence Friedl, NASA Headquarters

1:15 – 1:30 NASA Applied Sciences Program

Brad Doorn, NASA Headquarters

1:30 – 2:50 Remote Sensing of Precipitation and Snow Water Resources

Airborne Snow Observatory, Tom Painter, NASA Jet Propulsion Laboratory

Satellite Monitoring of the Snowpack in the Sierra Nevada, Jeff Dozier,
University of California, Santa Barbara

Enhancing California's Water Resource Management and Decision Support
Systems through Remote Sensing of Precipitation, Soroosh Sorooshian,
University of California, Irvine

2:50 – 3:05 Break

3:05 – 4:00 Remote Sensing for Drought Impact Assessment and Mitigation

Remote Monitoring of Groundwater with Orbital Radar, Tom Farr, NASA Jet
Propulsion Laboratory

Fallowed Area Mapping for Drought Impact Reporting and Decision Making, Jim
Verdin, USGS / Forrest Melton, NASA Ames Research Center, Cooperative for
Research in Earth Science and Technology (ARC-CREST)

Satellite Irrigation Management Support, Forrest Melton, NASA ARC-CREST

4:00 – 4:20 Sub-seasonal Forecasting

Atmospheric Rivers and the Madden Julian Oscillation: Key Phenomena for
Predicting California Water Availability and Extremes, Duane Waliser, NASA Jet
Propulsion Laboratory

4:20– 4:45 **Questions and Discussion**

4:45 **Adjourn**

Wednesday, February 26th

9:00 – 9:40 **2014 California Water Outlook**

2014 California Water Outlook and Update from the National Integrated Drought Information System Workshop, Kelly Redmond, Desert Research Institute

Real-time Satellite Estimation and Mapping of Snow Water Equivalent across the Sierra Nevada, Noah Molotch, University of Colorado, Boulder

9:40 – 10:20 **Drought in the Context of Climate Change and Infrastructure**

Adaptation Planning for Climate Change Impacts using Advanced Decision Support and Remote Sensing: Irrigated Agriculture in California's Central Valley, Jonathan Winter, Dartmouth University / NASA Goddard Institute for Space Studies

Monitoring of California Levees with Airborne Remote Sensing, Cathleen Jones, NASA Jet Propulsion Laboratory

10:20 – 11:00 **Satellite Remote Sensing of Soil Moisture and Groundwater**

Remote Sensing of Soil Moisture: The Soil Moisture Active Passive Mission, Narendra Das, NASA Jet Propulsion Laboratory
Recent Observations from California and Future Directions for GRACE, Jay Famiglietti, University of California, Irvine

11:00 – 11:20 **Questions and Discussion**

11:20 **Adjourn**

